Amendments to the Claims

This listing will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1 - 5 (canceled)

6. (currently amended) An apparatus for determining factors for insulin therapy comprising:

a memory device storing at least one data set, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device programmed to use an insulin sensitivity factor for the patient wherein the initial insulin sensitivity factor can be one of an estimated insulin sensitivity factor, the most recently known insulin sensitivity factor, and an initial insulin sensitivity factor, and to determine a carbohydrate to insulin ratio for the at least one data set using the insulin sensitivity factor; ~~An apparatus as claimed in claim 5,~~

wherein said processing device is programmed to determine a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

7. (currently amended) An apparatus for determining factors for insulin therapy comprising:

a memory device storing at least one data set, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device programmed to use an insulin sensitivity factor for the patient wherein the initial insulin sensitivity factor can be one of an estimated insulin sensitivity factor, the most recently known insulin sensitivity factor, and an initial insulin sensitivity factor, and to determine a carbohydrate to insulin ratio for the at least one data set using the insulin sensitivity factor;~~An apparatus as claimed in claim 5,~~

wherein said processing device is programmed to determine an insulin sensitivity factor for each data set using a carbohydrate to insulin ratio for the patient wherein the carbohydrate to insulin ratio can be an estimated carbohydrate to insulin ratio, the most recently known carbohydrate to insulin ratio, an initial carbohydrate to insulin ratio, the carbohydrate to insulin ratio determined for a data set, and a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

8. (previously presented) An apparatus as claimed in claim 7, wherein said processing device is programmed to determine a weighted average for an insulin sensitivity factor for a selected time period using the insulin sensitivity factor for each of respective data sets.

9. (currently amended) An apparatus as claimed in claim [[5]]6,

wherein said processing device is selected from the group consisting of a personal computer, a personal data assistant, a hand held computing device, a blood glucose monitor, an infusion pump, a medication delivery pen, a meter, a calculator, a therapeutic device used for managing a patient's blood glucose levels, a diagnostic device used for managing a patient's blood glucose levels, and an informational device used for managing a patient's blood glucose levels.

Claims 10 – 19 (canceled)

20. (previously presented) An apparatus for determining factors for insulin therapy comprising:

a memory device storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device connected to the memory device and programmed to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period, to determine a correct insulin amount using the delta blood glucose level, an insulin sensitivity factor, and the amount of insulin administered to the patient during the selected period, and to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

21. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

22. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to determine a carbohydrate to insulin ratio for the selected period by calculating a weighted average of the plurality of daily carbohydrate to insulin ratios.

23. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to generate an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

24. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is further programmed to determine the amount of insulin not needed for carbohydrates

consumed on a given day, and an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

25. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to determine the amount of insulin not needed for carbohydrates consumed on a given day by determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios, dividing the value corresponding to the patient's food intake by the carbohydrate to insulin ratio for the selected period, the value for the patient's food intake being the value for the selected period obtained from the data set of one of the plurality of days corresponding to the given day, and subtracting the result of the dividing step from the an estimate of the insulin sensitivity factor for the given day.

26. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to determine the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

27. (previously presented) An apparatus as claimed in claim 20, wherein the processing device is programmed to determine an insulin sensitivity factor for the selected period by calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

Claims 28 – 40 (canceled)

41. (original) A computer readable medium of instructions to determine factors used for insulin therapy comprising:

a first set of instructions to store at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period;

a second set of instructions to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period; and

a third set of instructions to determine a correct insulin amount using the delta blood glucose level divided by an insulin sensitivity factor, and the result of the division being added to the amount of insulin administered to the patient during the selected period.

42. (original) A computer readable medium as claimed in claim 41, wherein the selected period of time corresponds to a period of time occurring within one day.

43. (original) A computer readable medium as claimed in claim 41, wherein the selected period of time comprises one meal time selected from the group consisting of breakfast, lunch, dinner, or snack.

44. (original) A computer readable medium as claimed in claim 41, further comprising a fourth set of instructions to generate an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

45. (original) A computer readable medium as claimed in claim 41, further comprising:

a fourth set of instructions to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days; and

a fifth set of instructions to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

46. (original) A computer readable medium as claimed in claim 45, wherein said fifth set of instructions comprises instructions to calculate a weighted average of the plurality of daily carbohydrate to insulin ratios.

47. (original) A computer readable medium as claimed in claim 41, further comprising a fourth set of instructions to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount divided into the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

48. (original) A computer readable medium as claimed in claim 47, further comprising a fifth set of instructions to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

49. (original) A computer readable medium as claimed in claim 48, further comprising:

a sixth set of instructions to determine the amount of insulin not needed for carbohydrates consumed on a given day; and

a seventh set of instructions to determine an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

50. (original) A computer readable medium as claimed in claim 49, further comprising an eighth set of instructions to determine the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

51. (original) A computer readable medium as claimed in claim 50, wherein the eighth set of instructions comprises instructions to determine an insulin sensitivity factor for the selected

period by calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

52. (previously presented) An apparatus for determining factors used for insulin therapy comprising:

a memory device storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device connected to the memory device and programmed to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period, and to determine a correct insulin amount using the delta blood glucose level divided by an insulin sensitivity factor, and the result of the division being added to the amount of insulin administered to the patient during the selected period.

53. (original) An apparatus as claimed in claim 52, wherein the selected period of time corresponds to a period of time occurring within one day.

54. (original) An apparatus as claimed in claim 52, wherein the selected period of time comprises one meal time selected from the group consisting of breakfast, lunch, dinner, or snack.

55. (previously presented) An apparatus as claimed in claim 52, wherein the processing device is further programmed to generate an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and divide the at least one number by the daily insulin dose

56. (previously presented) An apparatus as claimed in claim 52, wherein the processing device is programmed to

determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days, and

determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

57. (previously presented) An apparatus as claimed in claim 56, wherein the processing device is programmed to determine a carbohydrate to insulin ratio for the selected period by calculating a weighted average of the plurality of daily carbohydrate to insulin ratios.

58. (previously presented) An apparatus as claimed in claim 52, wherein the processing device is programmed to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount divided into the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

59. (previously presented) An apparatus as claimed in claim 58, wherein the processing device is programmed to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

60. (previously presented) An apparatus as claimed in claim 59, wherein the processing device is programmed to:

determine the amount of insulin not needed for carbohydrates consumed on a given day; and

determine an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

61. (previously presented) An apparatus as claimed in claim 60, wherein the processing device is programmed to determine the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

62. (previously presented) An apparatus as claimed in claim 61, wherein the processing device is programmed to determine wherein the step of determining an insulin sensitivity factor for the selected period by calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.